



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/751,712	01/05/2004	Hideji Tajima	32135.7	2258
27683 7590 01/10/2008 HAYNES AND BOONE, LLP 901 Main Street Suite 3100 Dallas, TX 75202			EXAMINER RAMILLANO, LORE JANET	
			ART UNIT 1797	PAPER NUMBER
			MAIL DATE 01/10/2008	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

Application No.

10/751,712

Applicant(s)

TAJIMA ET AL.

Examiner

Lore Ramillano

Art Unit

1797

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 10/24/07.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 30-40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 30-40 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 1/5/04 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☒ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

Certified copies of Application No. 2001-207143 and PCT/JP02/06021 have not been received.

**DETAILED ACTION**

***Election/Restrictions***

1. Applicant's election without traverse of claims 30-40 in the reply filed on 10/24/07 is acknowledged.

***Status of Claims***

2. In applicant's reply filed on 10/24/07, applicant amended claims 30, 32, 35, and 36; and cancelled claims 1-29 and 41-44. Claims 30-40 are pending and under examination.

***Priority***

***35 USC 120***

3. Applicant's claim for the benefit of a prior-filed application (PCT/JP02/06852) under 35 U.S.C. 35 U.S.C. 120, or 365(c) is acknowledged.

Applicant's claim for the benefit of a prior-filed application (PCT/JP02/06021) under 35 U.S.C. 35 U.S.C. 120, or 365(c) does not comply with one of the conditions for receiving the benefit of an earlier filing date under 35 U.S.C. 120 because it cannot be determined whether the continuing application has at least one inventor in common with the prior international application (PCT/JP02/06021).

***35 USC 119***

4. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Japan on 7/6/01. It is noted, however, that applicant has not filed a certified copy of Application No. 2001-207143 as required by 35 U.S.C. 119(b).

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

6. **Claims 30-34, 36, 37, and 40** are rejected under 35 U.S.C. 102(e) as being anticipated by Chang et al. ("Chang," US 6403037).

In Figs. 1-6, Chang discloses a reaction apparatus, comprising the a reaction vessel (i.e. 12) comprising a reaction vessel main body equipped with a reaction chamber (i.e. 17) having an opening and capable of holding a reaction solution, and a cover member (i.e. 30) capable of sealing the opening of the reaction chamber, a plurality of temperature controllers (i.e. 52, fig. 5 and column 18, lines 8-18; column 30, lines 44-67), a light source (i.e. 68, fig. 6), and a fluorescent light detector (i.e. 70, fig. 6),

wherein the cover member and the reaction chamber have a contact surface (i.e. 38, fig. 2) that comes into contact with the reaction solution held in the reaction chamber in a state in which the cover member is mounted on the reaction vessel main body,

wherein the cover member is made of a light transmitting material so that light can pass from the reaction solution held in the reaction chamber, through the contact surface of the cover member, to the outside of the reaction vessel, or the reaction vessel main body is made of a light transmitting material so that light can pass from the reaction solution held in the reaction chamber, through the contact surface of the reaction chamber, to the outside of the reaction vessel (i.e. column 15, lines 16-58),

wherein the cover member is made of a light transmitting material so that light can pass from the outside of the reaction vessel, through the contact surface of the cover member, to the reaction solution held in the reaction chamber, or the reaction vessel main body is made of a light transmitting material so that light can pass from the outside of the reaction vessel, through the contact surface of the reaction chamber, to the reaction solution held in the reaction chamber (i.e. column 15, lines 16-58),

wherein the temperature controller is attached to the cover member and/or the reaction vessel main body so that temperature of the reaction solution held in the reaction chamber can be controlled through the contact surface of the cover member and/or the contact surface of the reaction chamber (i.e. see fig. 5),

the light source is provided so that the reaction solution held in the reaction chamber can be irradiated with light through the contact surface of the cover member and/or the contact surface of the reaction chamber (i.e. column 16, lines 56-67),

the fluorescent light detector is provided so that fluorescent light emitted from the reaction solution held in the reaction chamber can be detected through the contact surface of the cover member and/or the contact surface of the reaction chamber (i.e. column 17, lines 1-8); and the reaction apparatus is for PCR (i.e. column 1, lines 18-32).

Chang further discloses that the temperature controller is attached to the wall component of substantially uniform thickness that constitutes the cover member and that has the contact surface of the cover member, and/or the wall component of substantially uniform thickness that constitutes the reaction vessel main body and that has the contact surface of the reaction chamber (i.e. column 7, line 56 to column 8, line 2).

As to claim 32, Chang discloses that the reaction chamber has an opposing surface opposite the contact surface of the cover member, and when the cover member is mounted on the reaction vessel main body, all or part of the reaction solution held in the reaction chamber is held in the form of a thin layer between the contact surface of the cover member and the opposing surface of the reaction chamber (i.e. see figs. 1-2),

wherein the reaction chamber has an enveloping surface that envelops the reaction solution present between the contact surface of the cover member and the opposing surface of the reaction chamber (i.e. see figs. 1-2), and

wherein when the cover member is mounted on the reaction vessel main body, a tightly closed space is formed by the contact surface of the cover member, the opposing surface of the reaction chamber, and the enveloping surface of the reaction chamber, and all or part of the reaction solution is held in the form of a thin layer within the tightly closed space (note: *applicant should that this recited language does not positively recite structural limitations and will be interpreted as intended use language*).

As to claim 34, Chang discloses a plurality of optical fibers disposed around the enveloping surface of the reaction chamber, wherein the irradiation of the reaction solution with light from the light source and/or the detection of fluorescent light emitted from the reaction solution is accomplished by utilizing the optical fibers (i.e. column 18, lines 8-18).

As to claim 35, Chang discloses a reaction apparatus, comprising a reaction vessel installation part (i.e. fig. 6, column 16, lines 41-55) in which the a reaction vessel is installed,

wherein a tightly closed space is formed by the contact surface of the reaction chamber and the contact surface of the cover member when the cover member is mounted on the reaction vessel main body, and all or part of the reaction solution is held in the tightly closed space (i.e. see figs. 1-2),

wherein a nozzle tip fitting space (i.e. see figs. 1-2), into which a nozzle tip mounted on a nozzle capable of the intake and discharge of a liquid can be fitted, is formed in the cover member, and a nozzle tip fitting hole (i.e. see figs. 1-2) leading to the nozzle tip fitting space is formed so as to allow the nozzle tip to be fitted into the nozzle tip fitting space while the cover member is mounted on the reaction vessel main body,

wherein a through-hole communicating between the outside of the reaction vessel, the tightly closed space, and the nozzle tip fitting space can be formed in the reaction vessel main body and the cover member by a puncture needle provided on the outside of the reaction vessel while the cover member is mounted on the reaction vessel main body  
(note: *the language recited here will be interpreted as intended use language since it*



*appears to recite product-by-process language, "the through-hole . . . can be formed . . . by a puncture needle"), and*

wherein the first temperature controller is provided so that the temperature of the reaction solution held in the tightly closed space of the reaction vessel installed in the reaction vessel installation part can be controlled through the contact surface of the reaction chamber (i.e. 52, fig. 5 and column 18, lines 8-18; column 30, lines 44-67).

Chang further discloses a temperature controller mounting and removing part (i.e. 81, figs. 7-8, column 18, line 60 to column 20, line 22) for mounting and removing the second temperature controller in the nozzle tip fitting space; wherein the temperature controller mounting and removing part performs an operation for mounting the second temperature controller in the nozzle tip fitting space prior to the reaction, and operation for removing the second temperature controller from the nozzle tip fitting space after the reaction.

Chang further discloses a puncture vessel installation part (i.e. fig. 22) in which a puncture vessel is installed, a nozzle capable of the intake and discharge of a liquid, and a nozzle transfer part,

wherein the puncture vessel comprises a liquid holding space capable of holding a liquid, an opening that leads to the liquid holding space, and a puncture needle,

the liquid holding space is formed so that the reaction vessel can be accommodated in the liquid holding space through the opening,

the puncture needle is provided so as to protrude into the liquid holding space from the wall component of the puncture vessel forming the liquid holding space,

the nozzle transfer part performs an operation for fitting the nozzle tip mounted on the nozzle in the nozzle tip fitting space of the reaction vessel installed in the reaction vessel installation part, operation for transferring the reaction vessel with the mounted nozzle tip fitted therein to the puncture vessel installation part, and

operation for accommodating the reaction vessel in the liquid holding space of the puncture vessel installed puncture vessel installation part, and for forming in the cover member and the reaction vessel main body, by means of the puncture needle provided in the puncture vessel, a through-hole that communicates with the nozzle tip fitting space, the tightly closed space of the reaction vessel, and the liquid holding space of the puncture vessel, and

the nozzle performs an operation for extracting the reaction solution held in the tightly closed space of the reaction vessel into the liquid held in the liquid holding space of the puncture vessel, by the intake and discharge of the liquid through the through-hole (i.e. column 28, lines 16-41).

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. **Claims 35, 38, and 39** are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang.


Chang does not specifically disclose that the second temperature controller is removably mounted in the nozzle tip fitting space of the cover member. It would have been obvious to a person of ordinary skill in the art to modify Chang's invention by having the second temperature controller to be removably mounted in the nozzle tip fitting space of the cover member because it would be more efficient to have a plurality of temperature controllers placed in different areas adjacent to the reaction apparatus to insure that the temperature inside the reaction apparatus is uniform throughout the reaction apparatus.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lore Ramillano whose telephone number is (571) 272-7420. The examiner can normally be reached on Mon. to Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on (571) 272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Lore Ramillano  
Examiner  
Art Unit 1797

  
Jill Warden  
Supervisory Patent Examiner  
Technology Center 1700